

NEW MEXICO STATE UNIVERSITY  
AND COLORADO STATE UNIVERSITY  
AGRICULTURAL EXPERIMENT STATIONS,  
NEW MEXICO STATE HIGHWAY DEPARTMENT  
AND  
UNITED STATES DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE

NOTICE OF THE NAMING AND RELEASING OF 'ARRIBA' WESTERN WHEATGRASS  
(AGROPYRON SMITHII RYDB.) FOR SOIL STABILIZATION AND RANGE  
REVEGETATION.

The Agricultural Experiment Stations of New Mexico State University and Colorado State University, the New Mexico State Highway Department, and the U. S. Department of Agriculture, Soil Conservation Service, announce the naming and release for commercial seed production of Arriba western wheatgrass. Arriba was evaluated at the Los Lunas Plant Materials Center, Middle Rio Grande Branch Station, at the Main Station of New Mexico State University Agricultural Experiment Station, Las Cruces, New Mexico, and at the Tucson Plant Materials Center, Tucson, Arizona. Field testing was carried out at various locations in New Mexico and Colorado in cooperation with the New Mexico State Highway Department, Colorado State University, and other cooperators of the Soil Conservation Service.

Description:<sup>1/</sup> Western wheatgrass is a cool season, rhizomatous, sod-forming, perennial grass. Culms are erect, 30 to 60 cm tall with creeping rhizomes; blades are firm, stiff, mostly flat when fresh, involute on drying, strongly nerved, scabrous, to 4 mm wide and tapering to a sharp point. Flowering spikes are erect, 7 to 15 cm long; spikelets are closely intricate, 6 to 10 flowered, 1 to 2 cm long; glumes are rigid, tapering to a short awn, and are faintly nerved. Entire plant is usually glaucous and gray-green in color.

Natural range of species is from Ontario to Alberta and British Columbia; New York; Michigan to Washington, south to Tennessee, and west to Texas, Arizona, and California. It is mostly introduced east of Iowa and Kansas. In Colorado and New Mexico it occurs naturally on loam to clay loam soils at elevations of 3,500 to 10,500 feet and on other moist saline soils in this elevational range. It is best adapted to the areas which receive winter-spring precipitation.

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<sup>1/</sup> Description and natural geographic range of adaptation adapted from Hitchcock, A. S. 1950. Manual of the Grasses of the United States. 2nd edition. Misc. Public. 200 USDA - US Gov. Print. Off. 1051 pp.

Use: Arriba is a palatable grass for use in revegetation of rangeland. Its aggressive rhizomatous nature and sod-forming habit make it a valuable soil stabilizer for critical areas in its natural range of adaptation.

Testing: Original seed was collected west of Flagler, Colorado on August 17, 1957 by J. A. Downs. It was tested as C-30.

Arriba was included in 3 strain trials at Los Lunas PMC with 39 other varieties or strains of western wheatgrass. These trials were planted in 1957, 1960, and 1971. Arriba was rated equal to or superior to all other strains and varieties for rapidness of emergence, uniformity of emergence, seedling vigor, forage production and seed production.

In a strain trial conducted at the Tucson PMC in Tucson, Arizona, Arriba ranked first in seed production. However, production of all strains was poor. Several other strains were superior to Arriba in seedling vigor and forage production at this location.

In studies carried out at the NMSU Main Station, Las Cruces, New Mexico, Arriba was equal to the other strains tested in forage production and significantly better in seed production. Arriba was average in rust and mite resistance.

Eight field-size seed increase plantings of Arriba were made during a 15 year period at Los Lunas PMC to evaluate seed production and obtain seed for additional field testing. All plantings were seeded in September. Seed fields were rogued to remove off-type plants. Seed was harvested with a combine. Seed production of Arriba was equal or superior to the five other strains in production of bulk and pure live seed. Seed yields are high enough to make commercial seed production profitable. This is an important characteristic, since good seed yields are generally difficult to obtain from most western wheatgrasses.

Arriba was field tested in 64 non-irrigated and 1 irrigated plantings on various soils and sites in Colorado and New Mexico. It outperformed all other species in 10 plantings, performed as well as all other species in 17 plantings, and was outperformed by one or more species in 22 plantings. Sixteen plantings were failures.

It was compared with one or more strains of western wheatgrass in 34 plantings. Arriba was rated better in performance than any other strain in 21 of these plantings, as good as any other strain in 11 plantings, and poorer than others in 2 plantings.

Propagation: Seed increase plantings produced enough seed to justify harvestings during the second growing season and remain productive for 3 to 4 years at Los Lunas. Average yearly bulk seed yield for plantings maintained for 3 to 7 years was 179 pounds per acre. Average pure live seed yield for the same years was 115 pounds per acre. Average seed yields for the first 4 harvest years for 8 plantings were:

	<u>1st</u> <u>Year</u>	<u>2nd</u> <u>Year</u>	<u>3rd</u> <u>Year</u>	<u>4th</u> <u>Year</u>
Bulk lbs/acre	147	266	212	144
PLS lbs/acre	74	167	172	90

Seed was direct combined and processed on an air-screen cleaner.

Supporting data for the material contained in this release notice is on file at the Los Lunas Plant Materials Center.

Seed Source: Breeder's seed will be produced by the Los Lunas Plant Materials Center. Limited quantities of foundation seed will be available through Natural Resource Conservation Districts and Crop Improvement Associations. Standards for all classes of seed will be included in the New Mexico Seed Certification Handbook and in the Colorado Grass Seed Certification Standards.